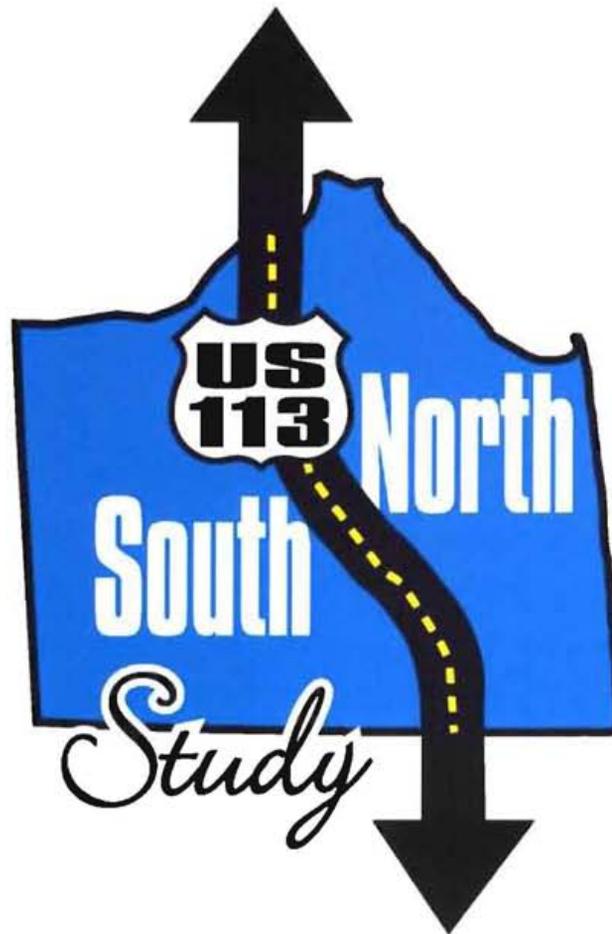


Report on Alternatives Retained for Detailed Study  
for US 113 in the  
**Georgetown-South Area**



prepared by the  
Delaware Department of Transportation

for the  
Federal Highway Administration

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# EXECUTIVE SUMMARY

## Introduction

The Delaware Department of Transportation (DelDOT) and the Federal Highway Administration (FHWA) are evaluating existing and projected transportation needs, and alternatives to address those needs, along the US 113 corridor in Sussex County, Delaware. This Alternatives Retained for Detailed Study (ARDS) document details the range of alternatives evaluated in the Georgetown-South study area of the US 113 corridor during the current effort and the alternatives being carried forward for consideration in a Draft Environmental Impact Statement (DEIS).

The purpose of the US 113 North/South Study is to establish a continuous limited access facility from the Delaware state line northward through Sussex County to SR 1 near Dover Air Force Base, thereby completing a limited access intrastate corridor throughout the state of Delaware. Specifically, in the Georgetown-South area, which extends from Georgetown to the Maryland state line, the purpose of the project is to preserve mobility for local residents and businesses while providing highway improvements that would reduce congestion and accommodate anticipated growth in local, seasonal, and through traffic.

## Development of Alternatives

Three broad ranged alternatives were developed. The No-Build alternative includes the existing transportation network plus currently committed future projects. Although the No-Build alternative does not meet the purpose of and need for this project, it will be retained for evaluation purposes. The Transportation System Management (TSM) alternative includes activities which maximize the efficiency of the present system. Because it does not provide for access limitation, the TSM alternative does not meet the purpose of and need for this project and has been eliminated. The Build alternative consists of constructing a new roadway facility on new alignment or changing the access of the existing facility and constructing appropriate ancillary service roads. The Build alternative is the only broad-ranged concept that meets the purpose of and need for this project.

A range of build alternatives was then developed, encompassing both upgrades to existing US 113 (on-alignment alternatives) and roadways on new alignment (east and west bypass alternatives). Although the range of alternatives was developed throughout the entire Georgetown-South study area, to better serve the public in the area, the public involvement effort was separated into two geographic areas. These include 1) Georgetown, which extends from north of Georgetown to north of Millsboro, and 2) Millsboro-South, which begins north of Millsboro and continues south to the Maryland state line at Selbyville. These two areas, considered together, form the Georgetown-South study area that is the focus of this report.

In the Georgetown area, three on-alignment alternatives were considered. To the east of Georgetown, two bypass alternatives were considered. On the other side of existing US 113, 13 complete west bypass alternatives were formed from eight roadway segments. All build alternative segments were developed with specific purposes such as logical interchange locations or avoidance of socio-economic, natural, or cultural resource constraints.

In the Millsboro-South area, three on-alignment alternatives were considered. On the eastern side of US 113, six off-alignment segments comprising nine full east bypass alternatives were considered. To the west, resource constraints dictated shorter bypass options. West of Millsboro, seven complete west bypass alternatives were formed from six roadway segments. In each of the towns to the south – Dagsboro, Frankford, and Selbyville – two short west bypasses were considered. As in the Georgetown area, all

build alternative segments in the Millsboro-South area were developed with specific purposes such as logical interchange locations or avoidance of socio-economic, natural, or cultural resource constraints.

## **Evaluation of Alternatives**

To reduce the full range of alternatives to a reasonable number for detailed study in the DEIS, matrices were developed to evaluate each alternative with respect to environmental, engineering, transportation, economic development, and right-of-way considerations. Citizen input was also sought through the project's intensive public involvement program.

Through the preliminary evaluation of the alternatives and their component segments by the project team, as well as input from the resource agencies and the public, numerous segments have been identified for elimination, resulting in a reduction in the number of total Build alternatives, from 18 to 8 in the Georgetown area and from 24 to 10 in the Millsboro-South area. The project team's initial recommendations were presented to the resource agencies on September 9, 2005, at which time additional agency input was incorporated.

From fall 2005 through spring 2007, DelDOT's project team conducted a more detailed evaluation of natural, cultural, and socio-economic resource impacts of the alternatives initially identified in September 2005. Furthermore, the project team considered two potential "East-to-East" alternatives that would connect the east bypass of Georgetown with the east bypass alternatives in the Millsboro-South area. Based on public input obtained at March 2007 workshops, the project team chose not to retain the East-to-East alternatives for detailed study.

At the March 15, 2007 Georgetown workshop, nearly 400 attendees voiced strong opposition to all bypass alternatives, both east and west, as well as support to modify the Yellow (on-alignment) alternative in a way that reduced impacts to properties along existing US 113. In response, the US 113 project team developed a Refined On-Alignment alternative to maintain the safety and capacity of a limited-access facility while minimizing property impacts. The project team further evaluated all Georgetown area alternatives and determined that the Refined On-Alignment alternative provides substantial advantages over the other alternatives under consideration.

## **Alternatives Retained for Detailed Study**

Based on the analysis presented in this report, the following alternatives will be carried forward for consideration in the DEIS.

### In the Georgetown area

- No-Build Alternative
- Refined On-Alignment Alternative

### In the Millsboro-South area

- No-Build Alternative
- On-Alignment Alternative A, Option 4 (Yellow, a hybrid of Options 1, 2, and 3)
- East Bypass Alternative B4-1 (Orange)
- East Bypass Alternative B4-2 (Red)
- East Bypass Alternative B4-3 (Blue)
- East Bypass Alternative B5-1 (Brown)
- East Bypass Alternative B5-2 (Pink)
- East Bypass Alternative B5-3 (Aqua)
- West Bypass Alternative D8 (Purple, with either connector 24N or 24S)
- West Bypass Alternative D9 (Green, with either connector 24N or 24S)
- West Bypass Alternative I-6 (Gold)

# **I. INTRODUCTION**

## **A. Purpose of This Report**

The Delaware Department of Transportation (DelDOT) and the Federal Highway Administration (FHWA), in cooperation with the United States Army Corps of Engineers (USACE), the United States Environmental Protection Agency (USEPA), and the United States Fish and Wildlife Service (USFWS), are evaluating existing and projected transportation needs and alternatives to address those needs along the US 113 corridor in Sussex County, Delaware. This Alternatives Retained for Detailed Study (ARDS) document details the range of alternatives evaluated in the Georgetown-South area of the US 113 corridor during the current effort and the alternatives being carried forward for consideration in a Draft Environmental Impact Statement (DEIS). The study area is shown in Figure 1.

Although a comprehensive range of alternatives was developed throughout the entire Georgetown-South study area, to better serve the public in the area, the public involvement effort was separated into two geographic areas. These include 1) Georgetown, which extends from north of Georgetown to north of Millsboro, and 2) Millsboro-South, which begins north of Millsboro and continues south to the Maryland state line at Selbyville. These two areas, considered together, form the Georgetown-South study area that is the focus of this report.

## **B. Project Description**

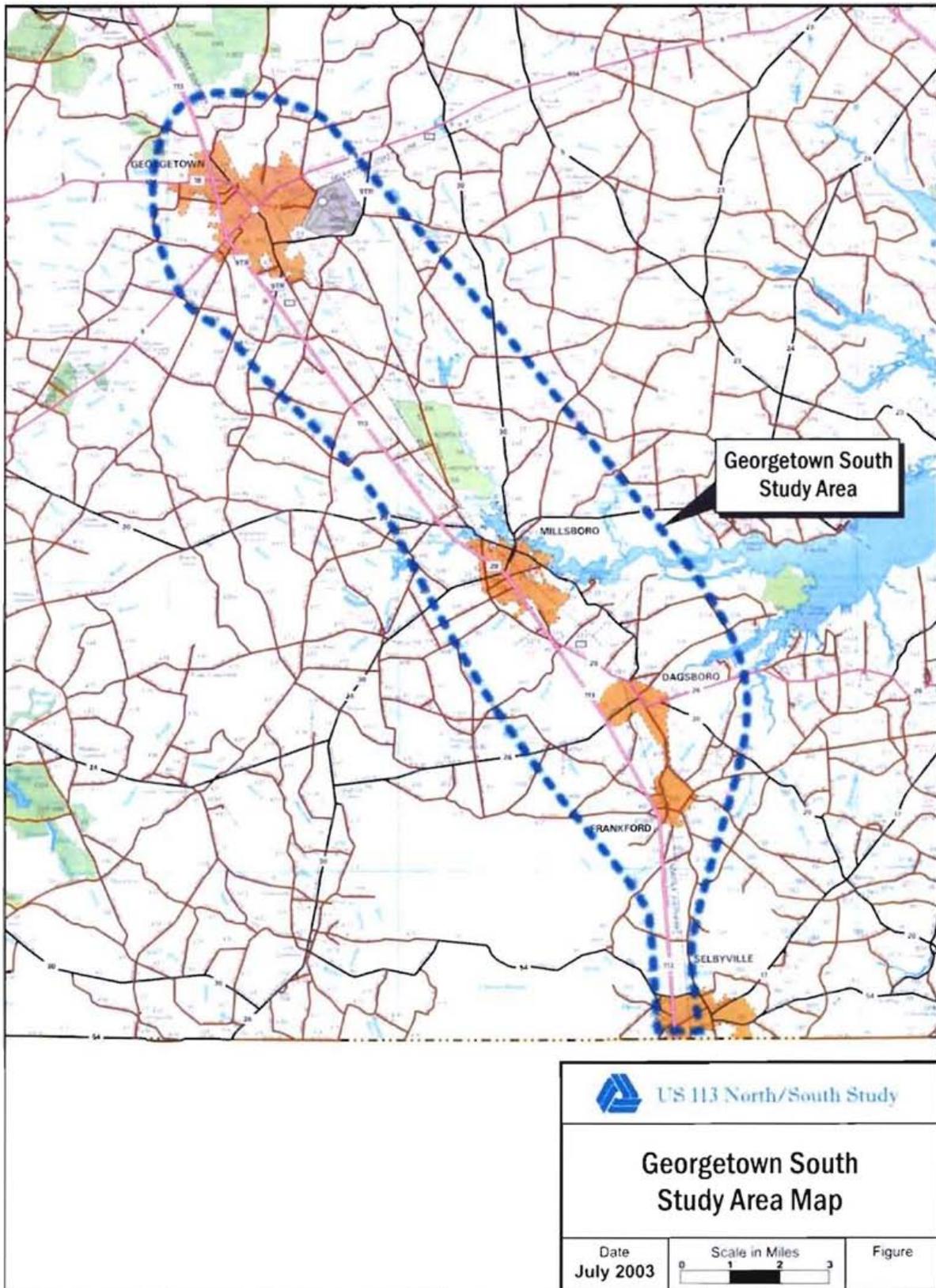
In 1996 the General Assembly passed section 145 of Title 17 of the Delaware Code enabling the Department of Transportation to develop a program to protect corridors serving predominantly statewide and/or regional travel in the State. The law established a roadway nomination process and called for nominations of new corridors every three years through the Department's Statewide Long Range Transportation Plan. US 113 was proposed for inclusion in the original program and formally adopted in February 1997.

In 2000, the Delaware State Senate adopted Senate Resolution No. 20 (S.R. 20), "calling upon the Delaware Department of Transportation to undertake the planning process for a new north-south limited access highway as an alternative to present routes U.S. 13 and U.S. 113 through Sussex County." Completed in 2001, the *Sussex County North-South Transportation Feasibility Study* confirmed the feasibility of a north/south limited access highway through Sussex County and recommended that the US 113 corridor be studied for this purpose.

## **C. Project Purpose**

The purpose of the US 113 North/South Study is to establish a continuous limited access facility from the Delaware state line northward through Sussex County to SR 1 near Dover Air Force Base, thereby completing a limited access intrastate corridor throughout the state of Delaware. As such, this study will identify potential corridors that address existing and future transportation needs along the US 113 corridor while preserving environmental and historic resources, as well as the existing corridor. Specifically, in the Georgetown-South area, the purpose of the project is to preserve mobility for local residents and businesses while providing highway improvements that would accommodate the anticipated growth in local, seasonal, and through traffic.

Figure 1. Georgetown-South Study Area.



## D. Project Need

### Existing Conditions

Although US 113 in the Georgetown-South study area has been designated part of the Corridor Capacity Preservation Program (CCPP), no plan has yet been established to accomplish the goals of the CCPP. North of Milford, SR 1 between I-95 and the Dover Air Force Base is already limited access, and provision of limited access will be extended south to the US 113 split and beyond by the CCPP. To the south, US 113 in Maryland is being reconstructed to eliminate most traffic signals and enhance the capacity of the roadway to carry through traffic. Therefore, only the portion of US 113 between Selbyville and Milford, including the Georgetown-South study area, does not yet have a corridor preservation plan in place. This project will form the CCPP plan for the study area.

Today, three of the nine signalized intersections in the Georgetown-South study area operate at unacceptable levels of service. In addition, east-west travel speeds through some of the towns in the study area are extremely slow due to congestion in those towns. From a safety perspective, the number of crashes along US 113 in the Georgetown-South area increased by 74 percent between 1992 and 2002, nearly double the 39 percent increase in population in Sussex County during the same period. More than 20 percent of US 113 in the study area is now comprised of high-accident locations.

### Future Conditions

Sussex County's population and employment are projected to grow by approximately 60 percent over the next 30 years. Within the municipal boundaries of Millsboro, Dagsboro, and Georgetown alone, nearly 7,000 new dwelling units are anticipated within the next ten years. Projected traffic growth is expected to result in failure of seven of the existing nine signalized intersections in the Georgetown-South study area by 2030. Continued development will require additional access points and traffic signals along US 113 resulting in greater potential for conflicts between through and local traffic. Furthermore, already substandard east-west travel speeds will worsen as traffic increases.

## II. DEVELOPMENT OF ALTERNATIVES

Development and evaluation of project alternatives for US 113 has been an iterative process. First, broad-ranged concepts were considered and reviewed against the project's purpose and need. Next, a wide range of preliminary build alternatives was developed. Finally, through an extended process of coordination with the public and the resource agencies, those alternatives were evaluated and narrowed to create a list of ARDS.

The initial broad-ranged alternatives were as follows:

- The **No-Build alternative** includes the existing network of roads plus currently programmed, committed and funded roadway and transit projects, with the exception of the US 113 North/South Study, as listed in DelDOT's 2030 Constrained Long Range Plan (CLRP). The CLRP does not list any improvements to facilities within the Georgetown-South study area. Minor improvements are listed for SR 24 and SR 26, respectively, east of the study area. These proposed changes, such as provision of turn lanes and shoulders, do not result in noteworthy capacity changes along the US 113 corridor. Therefore, the No-Build alternative assumed no construction other than routine maintenance and repair.

The No-Build Alternative does not meet the purpose of and need for this project. However, the No-Build Alternative does provide a baseline condition with which to compare the other alternatives considered and their consequences. As such, the No-Build Alternative was retained for evaluation purposes.

- The **Transportation System Management (TSM) alternative** includes those activities which maximize the efficiency of the present system. Those activities may include fringe parking, ride sharing, traffic signal optimization and Intelligent Transportation Systems (ITS), and High Occupancy Vehicle (HOV) lanes on existing facilities.

The TSM alternative does not provide for access limitation and, therefore, does not meet the purpose of and need for this project. As a result, it was eliminated from further consideration.

- The **Build alternative** consists of constructing a new roadway facility on new alignment or changing the access of the existing facility and constructing appropriate ancillary service roads. The Build alternative is the only broad-ranged concept that meets the purpose of and need for this project.

### III. DEVELOPMENT OF BUILD ALTERNATIVES

For the US 113 North/South Study, the Build alternative was categorized into three major concepts: on-alignment concepts and east and west new alignment concepts bypassing the populated areas along US 113. The preliminary bypass concepts were comprised of a combination of segments developed with specific purposes such as logical interchange locations or avoidance of socio-economic, natural, or cultural resource constraints.

#### A. On-Alignment Alternatives, Georgetown

As illustrated in Exhibit A, three alternatives to upgrade the existing alignment of US 113 through the Georgetown area were considered.

- **Georgetown - Alternative A, Option 1** includes upgrading existing US 113 to fully controlled access throughout the study area.

Starting at the northern end of the study area, the existing lanes of US 113 would be converted to full access control. On-ramps and off-ramps would be provided in each direction in the vicinity of Wilson Road, and again near the existing North Bedford Street intersection.

In the central portion of the Georgetown area, from north of SR 18/SR 404 to south of US 9, new northbound limited-access lanes would be built in the existing wide median. The existing southbound lanes would remain, but access to them would be denied. The existing northbound lanes would be converted to a two-way frontage road to allow full access to properties on the eastern side of US 113.

Option 1 includes direct access ramps to and from SR 18/SR 404 west and US 113 south, reflecting dominant traffic flow during peak periods. The SR 18/SR 404 through movement would be relocated to a new roadway crossing US 113 near the Wal-Mart and tying into North Bedford Street. Access to properties along the western side of US 113 would be, by means of a new rear access road, crossing US 113 at Edward Street to provide access to downtown Georgetown. Full interchanges would be provided at US 9 and at Arrow Safety Road, the latter permitting east-west traffic to directly access the US 9 truck route around the town.

From South Bedford Street to the southern end of the Georgetown area, ramp spacing under Option 1 is a minimum of one mile. In this area, this preliminary alternative includes grade separations with access ramps at Alms House Road, Governor Stockley Road, and Piney Grove Road/Avenue of Honor. Access is provided to nearly all currently developed parcels using a series of frontage and rear access roads.

- **Georgetown - Alternative A, Option 2** also includes upgrading existing US 113 to fully controlled access throughout the study area.

Starting at the northern end of the study area, the existing lanes of US 113 would be converted to full access control. On-ramps and off-ramps would be provided in each direction in the vicinity of Wilson Road, and again near the existing North Bedford Street intersection.

In the central portion of the Georgetown area, from north of SR 18/SR 404 to south of US 9, new northbound limited-access lanes would be built in the existing wide median. The existing southbound lanes would remain, but access to them would be denied. The existing northbound lanes would be converted to a two-way frontage road to allow full access to properties on the eastern side of US 113.

To accommodate the dominant traffic flow to and from SR 18/SR 404 west and US 113 south, Option 2 includes a two-lane access road paralleling US 113 to the west. This access road would serve two functions: 1) connecting SR 18/SR 404 directly to the US 9 truck route around Georgetown, and 2) providing access to existing developed properties along the western side of US 113, which will no longer have direct access to the highway. Limited-access US 113 would be elevated over existing SR 18/SR 404, with northbound and southbound access ramps located just south of the existing intersection. In addition, the west side access road would be connected to downtown Georgetown by means of a connector crossing US 113 at Edward Street. Full interchanges would be provided at US 9 and at Arrow Safety Road, the latter permitting east-west traffic to directly access the US 9 truck route.

From South Bedford Street to the southern end of the Georgetown area, ramp spacing under Option 1 is a minimum of one-third of a mile, representing more frequent access than Option 1. In this area, this preliminary alternative includes grade separations with access ramps at South Bedford Street, the Sussex Correctional Institution, Alms House Road/Speedway Road, Breasure Road/Betts Lane, Governor Stockley Road (two locations), Piney Grove Road/Avenue of Honor, and the Woodland Memorial Park. As with Option 1, access is provided to nearly all currently developed parcels using a series of frontage and rear access roads.

- **Georgetown - Alternative A, Option 3** consists of providing one additional lane in each direction on US 113 throughout the Georgetown portion of the Georgetown-South study area. From north of SR 18/SR 404 to south of US 9, the median of existing US 113 widens to 90 feet. In this area, Option 3 would include a new four-lane “express lane” cross section in place of the existing median. The express lanes would be elevated over the SR 18/SR 404 and US 9 intersections, which would remain to allow local movements. US 113 traffic to and from Georgetown would enter and exit at either end of the express lanes. Other than the express lane section, all existing signals would be retained.

## B. On-Alignment Alternatives, Millsboro-South

As illustrated in Exhibit B, three alternatives to upgrade the existing alignment of US 113 through the area from Millsboro south to Selbyville were considered.

- **Millsboro-South - Alternative A, Option 1** includes upgrading existing US 113 to fully controlled access throughout the study area.

From the northern end of the study area to south of Betts Pond, the existing lanes of US 113 would be converted to full access control. A full partial cloverleaf interchange would be provided at SR 20 west (Hardscrabble Road), and on- and off-ramps would be provided in each direction in the vicinity of Oak Avenue.

In central Millsboro, from south of Betts Pond to south of Radish Road, new southbound limited-access lanes would be built in the existing wide median. The existing northbound lanes would remain, but access to them would be denied. The existing southbound lanes would be converted to a two-way frontage road to allow full access to properties on the western side of US 113. For the most part, access to the properties on the eastern side of US 113 would be by means of existing roadways, with a limited number of new access roads. Access to and from controlled-access US 113 in this area would be limited to northbound on- and off-ramps at Houston Avenue and corresponding southbound movements at Old Landing Road. These ramps would tie to SR 24/SR 30 using surface streets, and SR 24/SR 30 would be elevated over US 113.

To the south, the existing lanes of US 113 would remain and be converted to limited access, with a new frontage road system along the western side of the highway. A new connector would be provided between Handy Road and Mitchell Street at the current site of M&T Boulevard, bridging over US 113. Access in this area would be provided by on- and off-ramps in both directions at Suburban Propane, south of M&T Boulevard. This system of ramps, with the new grade separation, would provide access to SR 20 east (Dagsboro Road).

South of SR 20 east (Dagsboro Road), Options 1 and 2 are identical. From SR 20 east to the vicinity of SR 26, new southbound limited-access lanes would be built on the western side of US 113, adjacent to the existing southbound lanes. The existing southbound lanes would remain, but they would be converted to northbound operation and access to them would be denied. The existing northbound lanes would be converted to a two-way frontage road to allow full access to properties on the eastern side of US 113. In the Dagsboro vicinity, a new frontage road would be constructed on the western side as well. To better accommodate east-west travel in Dagsboro, this option includes construction of a two-lane replacement of SR 26, passing to the south of Dagsboro. There would be a full interchange between this SR 26 connector and US 113.

Between Dagsboro and Frankford, the existing lanes of US 113 would be converted to full access control, with a new frontage road constructed on the southbound side to allow full access to properties on the western side of the highway.

In the Frankford area, new southbound limited-access lanes would be built in the existing wide median. The existing northbound lanes would remain, but access to them would be denied. The existing southbound lanes would be converted to a two-way frontage road to allow full access to properties on the western side of US 113. A grade separation would be provided at Gum Tree Road over US 113. Northbound and southbound on- and off-ramps would be provided in this vicinity, as well as at Frankford Avenue/Cat Mans Road.

From Frankford to just north of Selbyville, the existing lanes of US 113 would remain and be converted to limited access. In selected locations, a new frontage road would be provided along the western side of the highway. A full interchange will be constructed at Parker Road/Lazy Lagoon Road.

In Selbyville, new northbound limited-access lanes would be built in the existing wide median. The existing southbound lanes would remain, but access to them would be denied. The existing northbound lanes would be converted to a two-way frontage road to allow full access to properties on the eastern side of US 113. Some small access roads would provide access to properties on the western side of the highway. To better accommodate east-west travel in Selbyville, this option includes construction of a two-lane replacement of SR 54, passing to the north of its current alignment. There would be a full interchange between this SR 54 connector and US 113. Further south, a grade separation is proposed carrying Hoosier Street over US 113.

- **Millsboro-South - Alternative A, Option 2** also includes upgrading existing US 113 to fully controlled access throughout the study area.

From the northern end of the study area to south of Betts Pond, the existing lanes of US 113 would be converted to full access control. A full diamond interchange would be provided at SR 20 west (Hardscrabble Road), and on- and off-ramps would be provided in each direction in the vicinity of Oak Avenue.

In central Millsboro, from south of Betts Pond to south of Radish Road, new southbound limited-access lanes would be built in the existing wide median. The existing northbound lanes would remain, but access to them would be denied. The existing southbound lanes would be converted to a two-way frontage road to allow full access to properties on the western side of US 113. For the most part, access to the properties on the eastern side of US 113 would be by means of existing roadways, with a limited number of new access roads. Access to and from controlled-access US 113 in this area would be more frequent than in Option 1. Southbound ramps would be provided near Delaware Avenue and just north of SR 24/SR 30, with corresponding northbound movements at the Acme shopping center, Old Landing Road, near Wharton Street, and at Monroe Street. Grade separations would be provided at Radish Road and on a new alignment connecting Delaware Avenue on the west with Monroe Street on the east, the latter serving as a relocation of SR 24/SR 30 through town. Extensive access roads would be provided to tie these access points and grade separations to each other and to the existing street system in Millsboro.

To the south, the existing lanes of US 113 would remain and be converted to limited access, with a new frontage road system along the western side of the highway. A new connector would be provided between Handy Road and SR 20 (east), bridging over US 113. Access in this area would be provided by on- and off-ramps southbound at Suburban Propane and northbound just north of Sussex Lumber and at M&T Boulevard. This system of ramps, with the new grade separation, would provide access to SR 20 east (Dagsboro Road).

South of SR 20 east (Dagsboro Road), Options 1 and 2 are identical. See the description of Option 1 for details.

- **Millsboro-South Alternative A, Option 3** consists of providing one additional lane in each direction on US 113 throughout the Millsboro-South portion of the Georgetown-South study area. From south of Betts Pond to south of Radish Road, the median of existing US 113 widens to 90 feet. In this area, Option 3 would include an new four-lane “express lane” cross section in place of the existing median. The express lanes would be elevated over the SR 24/SR 30 intersection, which would remain to allow

local movements. US 113 traffic to and from Millsboro would enter and exit at either end of the express lanes. Other than the express lane section, all existing signals would be retained.

### C. East Bypass Alternatives

In addition to alternatives upgrading existing US 113 on its current alignment, two segments, shown in Exhibit C, were developed for consideration as east bypasses for Georgetown. Six segments were developed to bypass Millsboro to the east. These segments are shown in Exhibits C and D. Each of the Millsboro combinations is proposed to cross the Indian River at the same location. There are no east bypass segments developed for the community of Selbyville.

- **Georgetown Segment B** is a stand-alone alternative that would follow an on-alignment option from East Redden Road/Deer Forest Road for approximately one mile to the south before splitting from existing US 113 and turning east, on new alignment, crossing the Norfolk Southern rail line and paralleling Wilson Road to the north. A directional interchange would provide access between US 113 and Georgetown Segment B where the alignments split.

Continuing in a southeasterly direction, Georgetown Segment B would cross over Donovans Road and Wilson Road, where an interchange providing access between the local road system and Georgetown Segment B would be provided. The alignment continues in a southeasterly direction crossing over Rudd Road, under a realigned Sand Hill Road, which includes the realignment of Briarwood Road to the intersection of Rudd Road and Sand Hill Road creating a four legged intersection, and intersects US 9/SR 404 /Federalburg Road, west of Park Avenue, US 9TR with US 9/SR 404. A diamond interchange, providing access between Georgetown Segment B and the local road system, would be provided. Georgetown Segment B then crosses over the Delaware Coast Line Railroad as well as Park Avenue, US 9TR, turns to the southwest and crosses Springfield Road just east of the intersection of Springfield Road with Park Avenue, US 9TR.

The alignment continues in a southwesterly direction crossing over Sussex Pines Road (Sussex Road 324), west of Sussex Pines Country Club. Georgetown Segment B would then cross over the Norfolk Southern Railroad and Zoar Road (Sussex Road 48), south of the Sea Coast Speedway. The alignment ties back into existing US 113 west of Governor Stockley Road (Sussex Road 432). A directional interchange, providing access between Georgetown Segment B and US 113, would be provided. From this point south, this alternative would follow an on-alignment option.

- **Georgetown Segment C** is also a stand-alone alternative. It would follow an on-alignment option from East Redden Road/Deer Forest Road approximately two miles to the south before splitting from existing US 113 and turning southeasterly on new alignment, crossing over Donovans Road and the Norfolk Southern rail line. A directional interchange would provide access between US 113 and Georgetown Segment C where the alignments split.

The alignment continues in a more easterly direction and crosses under a realigned Savannah Road and interchanges with a realigned SR 9 north of the Perdue plant. The interchange provides access between US 9/SR 404 / Federalburg Road, Market Street, and other local roadways and Georgetown Segment C. The alignment continues south past the former US 9/SR 404, west of Sussex County Academy and crosses over the Delaware Coastline Railroad line. The alignment begins a turn to the southwest crossing over Springfield Road, west of the Sussex County Airport, and US 9TR, Park Avenue at the same location where Park Avenue crosses the Norfolk Southern Rail line. Georgetown Segment C continues south and west, crossing South Bedford Street northeast of the Sussex Correctional Institution. A directional interchange, providing access between US 113 south of

Georgetown and Georgetown Segment C, would be provided. From this point south, this alternative would follow an on-alignment option.

- **Millsboro-South Segment B6** diverges from US 113 just south of the intersection of Zoar Road and the Seacoast Speedway complex and north of the Stockley Center. Millsboro Segment B6 continues in a southeasterly direction, roughly paralleling Zoar Road, and continues along this alignment south of the Morris Millpond. The alignment crosses over Gravel Hill Road, Hollyville Road, and Maryland Camp Road before it turns south immediately east of Waples Pond and Longwood Pond toward SR 24, where there will be an interchange. The alignment to cross the Indian River is located south and east of the Mountaire poultry plant near the mouth of Swan Creek.
- **Millsboro-South Segment B5** diverges from US 113 just south of the Stockley Center and continues in an east, southeast direction toward and interchanges with Gravel Hill Road. The alignment continues to the southeast, crossing Hollyville Road, Maryland Camp Road, and Swan Creek between Waples Pond and Longwood Pond before it turns south to interchange with SR 24. South of SR 24, the alignment crosses the Indian River near the mouth of Swan Creek.
- **Millsboro-South Segment B4** is very similar to Millsboro Segment B5 except that it is located a few hundred feet closer to Millsboro than Segment B5. This segment diverges from US 113 just south of the Stockley Center and continues in an east, southeast direction toward and interchanges with Gravel Hill Road. The alignment continues to the southeast, crossing Hollyville Road, Maryland Camp Road, and Swan Creek between Waples Pond and Longwood Pond before it turns south to interchange with SR 24. South of SR 24, the alignment crosses the Indian River near the mouth of Swan Creek.

Millsboro Segments B1, B2 and B3 are described from the south to the north and meet Millsboro Segments B4, B5 and B6 at the proposed bridge over the Indian River.

- **Millsboro-South Segment B1** splits from existing US 113 between the towns of Dagsboro and Millsboro, approximately one mile from the intersection of US 113 and SR 20 east. Millsboro Segment B1 swings northeast to cross Dagsboro Road, the Norfolk Southern rail line, and Iron Branch Road. It turns north between the Indian River and Power Plant Road, tying into alignments B4, B5, and B6 north of the Indian River.
- **Millsboro-South Segment B2** was developed as a part of the off-alignment alternative around the southern side of Dagsboro. The alignment splits from existing US 113 between the towns of Dagsboro and Frankford. It swings northeast to cross Clayton Avenue and interchanges with SR 26 approximately one mile east of Main Street in Dagsboro. It continues north to cross Piney Neck Road and Power Plant Road, tying into alignments B4, B5, and B6 north of the Indian River.
- **Millsboro-South Segment B3** was developed as a part of the off-alignment alternative around the southern side of Frankford. The alignment splits from existing US 113 just south of the town of Frankford, approximately 200 feet south of the intersection of US 113 and Parker Road. It swings northeast to cross Pepper Road and Gum Road. It then continues north and crosses over Frankford School Road and Delaware Street, then interchanges with SR 26 approximately one mile east of Main Street in Dagsboro. It continues north to cross Piney Neck Road and Power Plant Road, tying into alignments B4, B5, and B6 north of the Indian River.

## D. West Bypass Alternatives

As on the east side of Georgetown, Millsboro, Dagsboro and Frankford, a range of alternatives was considered on new alignment west of these communities. A west bypass of Selbyville was also considered. Similar to the east bypass alternatives, from the point where each of the new alignments rejoins US 113 to the southern limit of the study area, each alternative will include upgrading existing US 113 to fully controlled access.

Eight segments, described below, form 13 complete west bypass alternatives for Georgetown. The Georgetown west bypass alternatives are shown in Exhibit E.

- **Georgetown Segment D** has its northern terminus on US 113 north of Wilson Road, turning west to avoid impacts to residences along the western side of US 113. South of SR 18/SR 404, the segment alignment bends south to pass along edge of wetlands southwest of Delaware Technical and Community College. The alignment continues south, avoiding wetlands west of US 113 while minimizing impact to properties along the existing highway.
- **Georgetown Segment E** has its northern terminus on US 113 near Wilson Road, turning west to avoid impacts to commercial properties along the western side of US 113 and attempting to minimize wetland impacts in this area. South of SR 18/SR 404, it bends south to pass along edge of wetlands southwest of Delaware Technical and Community College. The alignment continues south, avoiding wetlands west of US 113 while minimizing impact to properties along the existing highway.
- **Georgetown Segment F** shares its northern terminus with Georgetown Segment E on US 113 near Wilson Road, turning west to avoid impacts to commercial properties along the western side of US 113 and attempting to minimize wetland impacts in this area. South of SR 18/SR 404, the alignment continues southwest to avoid a large wetland area east of Vaughn Road, then bends southeast to cross US 9 west of Asbury Road.
- **Georgetown Segment 1** connects segments D and E with US 113 in the vicinity of the existing US 9 intersection.
- **Georgetown Segment 2** connects segments D, E, and F with US 113 just south of Arrow Safety Road, attempting to minimize impacts to wetlands and residences. The alignment passes west of Parker Road and includes a connector to Arrow Safety Road.
- **Georgetown Segment 3** connects segments D, E, and F with US 113 just south of Shortly Road, attempting to minimize impacts to wetlands and residences. This segment would include a connector to Arrow Safety Road.
- **Georgetown Segment 4** connects segments D, E, and F with US 113 north of Governor Stockley Road, attempting to minimize impacts to wetlands and residences. This segment includes a connector to Arrow Safety Road. At the southern end, the alignment passes between Breasure Road residences and a private airport.
- **Georgetown Segment 5** is a variant on Georgetown Segment 2, connecting segments D and E with US 113 just south of Arrow Safety Road. The alignment passes east of Parker Road and includes a connector to Arrow Safety Road.

Millsboro, Dagsboro, Frankford and Selbyville were also reviewed for west bypass alternatives. Fifteen segments were developed to bypass these communities to the west. These segments are shown in Exhibit F.

- **Millsboro-South Segment C** has its northern terminus on US 113 near Avenue of Honor, passing west of Woodlawn Memorial Park. The alignment crosses SR 20 just east of the existing Meadow Brook development. The alignment includes one of two connectors to SR 24 east of Millsboro (24N and 24S) described below.
- **Millsboro-South Segment D** starts on US 113 between Avenue of Honor and Patriots Way, beginning south of Woodlawn Memorial Park. The alignment crosses SR 20 just east of the existing Meadow Brook development. The alignment includes one of two connectors to SR 24 east of Millsboro (24N and 24S) described below.
- **Millsboro-South Segment 4** passes along the western side of the proposed Plantation Lakes development, crossing SR 24 just west of existing Godwin School Road. The segment was developed to minimize impacts to existing residences in the Radish Road and Indiantown Road areas, requiring a crossing of Iron Branch at a skew. The alignment ties into existing US 113 just north of SR 20.
- **Millsboro-South Segment 5** passes along the western side of the proposed Plantation Lakes development, turning west just south of Ingram Pond and crossing SR 24 just east of Parker Road. The segment was developed to minimize impacts to existing residences in the Radish Road and Indiantown Road areas, which requires crossing Iron Branch at an angle. The alignment ties into existing US 113 just north of SR 20.
- **Millsboro-South Segment 8** passes along the western side of the proposed Plantation Lakes development and crosses SR 24 just west of existing Godwin School Road. The segment attempts to minimize impacts to Iron Branch and its associated wetlands. The alignment ties into existing US 113 just north of SR 20.
- **Millsboro-South Segment 9** passes along the western side of the proposed Plantation Lakes development, turning west just south of Ingram Pond and crossing SR 24 just east of Parker Road. The alignment continues south, east of and roughly paralleling Hickory Hill Road. The segment crosses SR 26 while turning east, paralleling SR 26 and tying into existing US 113 just south of Dagsboro.
- **Millsboro-South Segment 24N** is the northern option for a connector to SR 24, and is associated with all west bypasses of Millsboro. This segment will be either a two-lane or three-lane connector beginning at the existing intersection of US 113 and Avenue of Honor and extending to the east. The segment's alignment passes to the north of Stockley Veterans Cemetery, crosses Cow Bridge Branch at a narrow point in its floodplain and associated wetlands, then continues east, crossing SR 30 and tying into SR 24 just east of Hollyville Road.
- **Millsboro-South Segment 24S** is also associated with all west bypasses of Millsboro. This segment will be either a two-lane or three-lane connector beginning at the existing intersection of US 113 and Avenue of Honor and extend to the east. The alignment would pass southwest of Stockley Veterans Cemetery, and parallel to Narrow Drain Branch, crossing Cow Bridge Branch at a narrow point in its floodplain and associated wetlands just above Millsboro Pond. The alignment continues east, crossing SR 30 and avoiding an agricultural district before tying into SR 24 just east of Hollyville Road.
- **Millsboro-South Segment E** is a short western bypass of the intersection of US 113 and SR 26, developed to minimize impacts to developed properties along SR 26.

- **Millsboro-South Segment F** is similar to Millsboro-South Segment E in that it is a short western bypass of the intersection of US 113 and SR 26. It was developed to reduce potential impacts to Dagsboro Church of God property along western side of US 113 north of SR 26.
- **Millsboro-South Segment G** is a short western bypass of Frankford, beginning north of Gum Tree Road and ending north of Delaware Street. The alignment crosses Blueberry Lane about ½ mile west of US 113. The alignment was developed to avoid wetland impacts at either end while allowing a bypass as far west as possible to minimize impacts to existing residences on Blueberry Lane.
- **Millsboro-South Segment H** is another short western bypass of Frankford, beginning near Gum Tree Road and ending south of Cat Mans Road. It crosses Blueberry Lane less than 1000 feet west of US 113. The alignment was developed to be as short as possible while minimizing impacts to existing commercial establishments along US 113 and existing residences on Blueberry Lane.
- **Millsboro-South Segment I** forms the northern half of the western bypass of Selbyville that begins approximately ¾ mile north of SR 54. The alignment then passes west of developed properties in Selbyville and an existing cemetery on SR 54 and minimizing impact to a floodplain of Polly Branch.
- **Millsboro-South Segment 6** connects segment I with US 113 south of Selbyville. This alignment minimizes impact to developed properties in Selbyville by extending south of the state line into Maryland.
- **Millsboro-South Segment 7** connects segment I with US 113 south of Selbyville. This alignment minimizes impacts south of the state line in Maryland, but as a result impacts developed residential and commercial properties in Selbyville.

#### IV. INITIAL EVALUATION OF ALTERNATIVES

To reduce the full range of preliminary alternatives to a reasonable number for detailed study in the Draft Environmental Impact Statement, preliminary matrices were developed in 2005 to evaluate each complete alternative with respect to environmental, engineering, transportation, economic development, and right-of-way considerations. These considerations are based on available planning information collected from Sussex County and State of Delaware agencies, field reviews of the project area with Federal and State agencies, and professional planning and engineering judgment. In addition to information contained in the matrices, citizen input was sought through the project's intensive public involvement program.

Complete preliminary matrices for each of the three major concepts (on-alignment, east bypass, and west bypass) are included in Exhibits G and H. The list of evaluation factors is listed on the left of the matrix and segment combinations are listed across the top.

Through preliminary evaluation of the segment combinations and through public input, several segments were identified for elimination. Correspondingly, the number of build alternatives was reduced. Reasons for segment and/or alternative elimination are listed below.

## **A. On-Alignment Alternatives**

**Georgetown On-Alignment Alternative A, Option 3.** This concept does not provide for full access control of the facility and therefore does not meet the purpose of and need for the project. This option also did not have public support.

**Millsboro-South On-Alignment Alternative A, Options 1 and 2.** Although these concepts provided full access control, they had substantial business and residential impacts in downtown Millsboro. As a result, there was strong public opposition to both of these options in Millsboro. However, both appear viable from south of Millsboro to the Maryland state line. As such, they will be considered in conjunction with the Millsboro portion of Option 3 described below as a hybrid alternative, Option 4.

**Millsboro-South On-Alignment Alternative A, Option 3.** This concept does not provide for full access control of the facility and therefore does not meet the purpose of and need for the project. However, the limited-access portion of this option in downtown Millsboro enjoyed some public support, and will be considered in conjunction with other on-alignment improvements as a hybrid alternative, Option 4.

## **B. East Bypass Alternatives**

**Georgetown Alternative C.** This concept is inconsistent with Georgetown's comprehensive land use plan, effectively separating the existing town with the Sussex County Airport and developing areas to the east. This option also did not have public support.

**Millsboro Segment B6.** This alternative was eliminated due to its impact to natural resources. Segments B4 and B5 provide the same benefits with fewer impacts.

## **C. West Bypass Alternatives**

**Georgetown Segment D.** This segment was eliminated because it has substantially greater wetland impacts than Segment E and provides comparable traffic benefits.

**Georgetown Segment 1.** This segment was eliminated because it does not meet the need to improve east-west traffic flow in Georgetown. The segment posed property impacts and operational concerns at intersection of US 113 and US 9. This option also did not have public support.

**Georgetown Segment 4.** This segment was dropped due to impacts to the National Register Listed Pepper Farm and an agricultural district.

**Millsboro-South Segment C** – This segment was dropped due to stream crossing impacts at Narrow Drain Branch and residential impacts on Country Living Road.

**Millsboro-South Segment 4** – This segment was dropped due to stream crossing and wetland impacts along Iron Branch. Segment 8 had the same benefits with fewer impacts.

**Millsboro-South Segment 5** – This segment was also dropped due to stream crossing and wetland impacts associated with Iron Branch. As with Segment 4, Segment 8 had the same benefits with fewer impacts.

**Millsboro-South Segment E** – This segment was dropped due to property impacts and lack of perceived benefit.

**Millsboro-South Segment F** – This segment was dropped due to property impacts and lack of perceived benefit.

**Millsboro-South Segment G** – This segment was dropped due to property impacts and lack of perceived benefit.

**Millsboro-South Segment H** – This segment was dropped due to property impacts and lack of perceived benefit.

**Millsboro-South Segment 7** – This segment was dropped due to substantial property impacts. Segment 6 had the same benefits with fewer impacts.

## **D. Summary of Initial Alternative Evaluation**

The initial evaluation of preliminary alternatives completed in 2005 resulted in the following alternatives being considered for detailed study.

### In the Georgetown area

- No-Build Alternative
- On-Alignment Alternative A, Options 1 and 2
- East Bypass Alternative B
- West Bypass Alternatives E2, E3, E5, F2, and F3

### In the Millsboro-South area

- No-Build Alternative
- On-Alignment Alternative A, Option 4 (a hybrid of Options 1, 2, and 3)
- East Bypass Alternatives B4-1, B4-2, B4-3, B5-1, B5-2, and B5-3
- West Bypass Alternatives D8 and D9 (with either connector 24N or 24S)
- West Bypass Alternative I-6

## **V. ADDITIONAL EVALUATION OF ALTERNATIVES IN THE GEORGETOWN AREA**

### **A. Additional Evaluation of Environmental Impacts**

From fall 2005 through spring 2007, DelDOT's project team conducted a detailed evaluation of natural, cultural, and socio-economic resource impacts of the alternatives listed in section IV.D. above. Specifically, the following activities were undertaken:

- Extensive consultation was conducted with natural resource agencies, including USACE, USEPA, USFWS, and the Delaware Department of Natural Resources and Environmental Control (DNREC). The project team and agency representatives participated in several joint meetings and field views to gain a full understanding of natural resource issues, including habitat quality.

- The project team prepared initial evaluations of all properties in the study area that are potentially eligible for the National Register of Historic Places. As of the date of this report, the Delaware State Historic Preservation Office (SHPO) has completed its review and concurred on all properties that could be directly impacted by alternatives in the Georgetown area. Review and consultation continues in the Millsboro-South area.
- The project team coordinated with USFWS and DNREC regarding Federal rare, threatened and endangered species (RTEs) of concern. Extensive studies were conducted to determine potential impacts to swamp pink, a Federally-listed plant species. No direct impacts were found in the Georgetown-South area. Likewise, the project team obtained mapping of known Bald Eagle nests from DNREC and found no impacts to the nests themselves or to the primary zones surrounding those nests. [Subsequent to the study, the Bald Eagle was removed from the Federal endangered species list.]
- During 2006, DelDOT completely updated its travel demand model to more accurately forecast future traffic volumes. The project team used these new forecasts to evaluate how the alternatives meet the purpose of and need for the project, as well as to calculate traffic-dependent impacts such as noise and air quality.
- Property and economic impacts were updated, and economic impacts to agriculture were calculated.
- DNREC approved and published new State Resource Area and Natural Area maps in fall 2006. The project team incorporated that mapping into the US 113 environmental inventory database, evaluated impacts to those areas associated with the alternatives, and made adjustments to minimize impacts.

## **B. East-to-East Alternatives**

Based on input received from the Georgetown's Town Manager in May 2006, the project team considered two potential alternatives that would connect the east bypass of Georgetown with the east bypass alternatives in the Millsboro-South area.

These "East-to-East" alternatives were considered for several reasons. First, they would eliminate impacts to the environmentally sensitive Cow Bridge Branch area along the eastern side of the Stockley Center. Second, they would result in a shorter end-to-end length than separate east bypasses of Georgetown and Millsboro, improving traffic diversion and reducing costs. East-to-East alternatives would also avoid impacts to the Town of Georgetown's wastewater spray irrigation facilities and to two existing developments: Golf Village and the Woods at Walls Creek.

There were potential disadvantages of the East-to-East alternatives as well. Their introduction relatively late in the study process required involving landowners and other stakeholders that were previously not impacted by any of the alternatives under consideration. The East-to-East alternatives pass entirely through areas designated by the Office of State Planning Coordination as level 4 investment areas in their State Strategies for Policies and Spending. This means that state investment in infrastructure projects in these areas should not encourage growth. Finally, potential natural and cultural resource impacts in the East-to-East alternatives area would need to be evaluated.

## **C. Public Input**

The potential East-to-East Alternatives and the detailed evaluation of environmental impacts for all Georgetown-South Area alternatives were presented to the public at two workshops: in Millsboro on March 12, 2007 and in Georgetown on March 15, 2007. Over 800 people attended the workshops.

At both workshops, there was substantial opposition to the East-to-East alternatives. As a result, Secretary of Transportation Carolann Wicks decided not to retain the East-to-East alternatives for detailed study.

At the March 15 Georgetown workshop, nearly 400 attendees voiced strong opposition to all bypass alternatives, both east and west, as well as support to modify the Yellow (on-alignment) alternative in a way that reduced impacts to properties along existing US 113. Secretary Wicks directed the Project Team to give renewed attention to refining the Yellow alternative to reduce property impacts.

In response, the US 113 project team developed a Refined On-Alignment alternative. The intent of this alternative was to retain US 113 along its existing alignment, maintaining the safety and capacity of a limited-access facility while minimizing property impacts. The Refined On-Alignment alternative consists of:

- Widening US 113 to provide one additional lane northbound and southbound
- Grade separations at seven intersections, removal of five traffic signals, and closure of all unsignalized crossovers along US 113
- Maintaining right-in/right-out movements for existing access and consolidating access where possible

Grade separations would be provided along US 113 at the following locations:

- Wilson Road
- SR 18 / SR 404
- US 9
- Arrow Safety Road (partial interchange to connect to relocated Park Avenue)
- South Bedford Street / Shortly Road
- Speedway Road / Kruger Road
- Governor Stockley Road

Widening and grade separations would be constructed in phases over time as conditions dictate.

## **D. Rationale for Elimination of Bypass Alternatives**

As noted above, there was overwhelming support from the public to eliminate all Georgetown area bypass alternatives from consideration. To determine the feasibility of that step, the project team evaluated all Georgetown area alternatives, including those initially recommended for detailed study plus the Refined On-Alignment alternative. The results of that evaluation can be found in the matrix in Exhibit J.

Specifically, the following were noted as advantages of the Refined On-Alignment alternative as compared to the other Georgetown area alternatives under consideration:

- Low wetland impacts (6.1 acres vs. between 37 and 50 acres for other alternatives)
- Low Waters of the United States impacts (2,920 linear feet vs. between 12,000 and 20,000 LF for other alternatives)
- Low subaqueous lands impacts (2,713 linear feet vs. between 9,000 and 13,000 LF for other alternatives)
- Low forest land impacts (7 acres vs. 64 to 122 acres for other alternatives)
- Low State Resource Area impacts (3 acres vs. 2 to 42 acres for other alternatives)
- No impact to DNREC-designated Natural Areas (vs. 1 to 26 acres for other alternatives)
- Low impacts to areas where rare, threatened, or endangered species may be found (9.2 acres vs. 16 to 44 acres for other alternatives)
- Fewer properties impacted (164 vs. 235 to 455 for other alternatives)
- Low number of property acquisitions (59 vs. between 52 and 94 for other alternatives)
- Low agricultural district impacts (2 acres vs. 7 to 41 acres for other alternatives)
- Lowest cost (16% to 41% less than other alternatives)

In addition to these measurable benefits, the Refined On-Alignment alternative maintains access to most existing properties adjacent to US 113 without the need for the system of access roads proposed as part of the Yellow alternatives. It also provides grade-separated access across US 113 for pedestrians and bicyclists and improves constructability, as the proposed improvements could be phased as needed.

However, the Refined On-Alignment alternative does not provide the same degree of access control as the other alternatives considered. Specifically:

- Multiple points of right-in, right-out access increase potential for crashes and congestion
- There is little or no separation between through and local traffic
- The SR 18/ SR 404 east-west connection across Georgetown is less direct

Furthermore, the Refined On-Alignment alternative has poor compatibility with Livable Delaware initiatives because it proposes a limited-access highway within an area designated as Level 1 (downtown Georgetown) by the Strategies for State Policies and Spending.

At meetings on April 23 and May 10, 2007, the Refined On-Alignment alternative was presented to the resource agency representatives. The advantages and disadvantages noted above were discussed and concerns were expressed, including placement of stormwater management facilities, impacts to cultural resources, and east/west traffic service. Without expressing a formal opinion, the agencies were generally supportive of the Refined On-Alignment alternative.

## **VI. ALTERNATIVES RETAINED FOR DETAILED STUDY**

Through the elimination of segments listed in the previous sections of this report, a number of build alternatives have been retained for detailed study. Thus, the following alternatives will be carried forward for consideration in the DEIS. Corresponding colors assigned for the detailed study phase are shown as well.

### In the Georgetown area

- No-Build Alternative
- Refined On-Alignment Alternative

### In the Millsboro-South area

- No-Build Alternative
- On-Alignment Alternative A, Option 4 (Yellow, a hybrid of Options 1, 2, and 3)
- East Bypass Alternative B4-1 (Orange)
- East Bypass Alternative B4-2 (Red)
- East Bypass Alternative B4-3 (Blue)
- East Bypass Alternative B5-1 (Brown)
- East Bypass Alternative B5-2 (Pink)
- East Bypass Alternative B5-3 (Aqua)
- West Bypass Alternative D8 (Purple, with either connector 24N or 24S)
- West Bypass Alternative D9 (Green, with either connector 24N or 24S)
- West Bypass Alternative I-6 (Gold)

**EXHIBIT A**

Maps Illustrating On-Alignment Alternatives in the Georgetown Area

**EXHIBIT B**

Maps Illustrating On-Alignment Alternatives in the Millsboro-South Area

**EXHIBIT C**

Maps Illustrating Eastern Bypass Alternatives in the Georgetown Area

**EXHIBIT D**

Maps Illustrating Eastern Bypass Alternatives in the Millsboro-South Area

**EXHIBIT E**

Map Illustrating Western Bypass Alternatives in the Georgetown Area

**EXHIBIT F**

Map Illustrating Western Bypass Alternatives in the Millsboro-South Area

**EXHIBIT G**

Preliminary Impact Matrices for the Georgetown Area – October 2005

**EXHIBIT H**

Preliminary Impact Matrices for the Millsboro-South Area – October 2005

These exhibits were distributed to the agencies in the prior version of this report. They are unchanged.

**EXHIBIT J**

**Updated Impact Matrices for the Georgetown Area – July 2007**



	No-Build	Yellow 1	Yellow 2
<b>Wetlands and Waters of the US</b>			
Wetlands (acres)	0	37.1	43.4
Waters of the US (linear feet)	0	17,405	16,732
Subaqueous lands (linear feet)	0	12,740	12,205
<b>Historic Resources</b>			
Number of Historic Properties within Study Area <sup>1</sup>	0	TBD	TBD
Number of Properties Potentially Subject to Section 4(f) <sup>2</sup>	0	TBD	TBD
Number of Cemeteries <sup>3</sup>	0	2	2
<b>Archaeological Resources</b>			
Number of Known Archaeological Sites in the Limit of Disturbance <sup>4</sup>	0	7	6
Prehistoric Sensitivity in the Limit of Disturbance <sup>5</sup>			
High Sensitivity Area (acres / %)	0	31 (4.2%)	31 (4.2%)
Moderate Sensitivity Area (acres / %)	0	49 (6.6%)	48 (6.7%)
Low Sensitivity Area (acres / %)	0	195 (26.5%)	197 (27.54%)
Slight Sensitivity Area (acres / %)	0	461 (62.6%)	441 (61.5%)
Early Historic-Period Sensitivity in the Limit of Disturbance <sup>6</sup>			
High Sensitivity Area (acres / %)	0	4 (0.5%)	4 (0.5%)
Moderate Sensitivity Area (acres / %)	0	9 (1.2%)	9 (1.2%)
Low Sensitivity Area (acres / %)	0	0 (0.0%)	0 (0.0%)
Slight Sensitivity Area (acres / %)	0	724 (98.4%)	705 (98.3%)
Later Historic-Period Sensitivity in the Limit of Disturbance <sup>7</sup>			
Extant Locations <sup>8</sup>	0	26	26
High Sensitivity Locations	0	110	110
Moderate Sensitivity Locations	0	3	3
Low Sensitivity Locations	0	21	21
<b>Section 4(f) Properties</b>			
Number of Publicly-Owned Parks and Recreation Areas	0	0	0
Number of Publicly-Owned Wildlife and Waterfowl Refuges	0	0	0
Number of State-Managed Wildlife Preserves (acres)	0	0	0
Number of Historic Properties <sup>2</sup>	0	TBD	TBD
<b>Section 6(f) Properties</b>			
Properties purchased by Land & Water Conservation Fund (LWCF) (number)	0	0	0
Area (acres)	0	0	0
<b>Natural Areas</b>			
State Resource Areas	0	13	13
Natural Areas	0	1	1
<b>Rare, Threatened and Endangered Species</b>			
Potential Rare, Threatened and Endangered Species Areas (acres) <sup>9</sup>	0	TBD	TBD
<b>Other Considerations</b>			
Agricultural Districts (Ten-Year) (number of properties)	0	2	2
(acres within properties)	0	7	7
Agricultural Preservation Easements (Permanent) (number of properties)	0	0	0
(acres within properties)	0	0	0
Forestland, 2002 Land Use (acres)	0	64	65
State Forest Lands	0	0	0
<b>Property Impacts</b>			
Properties affected (numbers of)	0	455	414
Properties affected (total acres)	0	850	700
<b>Access Rights</b>			
<i>Acquisitions (numbers of affected properties)</i>	0	67	67
Residential	0	34	28
Agricultural	0	20	18
Commercial	0	13	21
Approved residential lots	0	TBD	TBD
Other (existing vacant lots)	0	0	0
<i>Modified Access (numbers of affected properties)</i>	0	165	164
Residential	0	85	97
Agricultural	0	25	17
Commercial	0	55	50
Other	0	0	0
<b>Cost</b>			
Preliminary anticipated cost range - construction (\$ millions)	0	\$335 - \$409	\$365 - \$446
<b>Livable Delaware</b>			
Consistency with State Strategies and local comprehensive plans <sup>10</sup>	N/A	POOR	POOR
<b>Engineering</b>			
Existing US 113/SR 1 length (miles)	10.6	10.6	10.6
Proposed US 113 off-alignment length (miles)	0.0	0.0	0.0
Total length of alternative (miles)	10.6	10.6	10.6

<sup>1</sup> Historic properties and resources listed on or determined eligible for the National Register of Historic Places; eligibility status is based on consultant recommendations reviewed by DelDOT and SHPO staff; as of January 2007, consensus has been reached on most recommendations. Study area encompasses all properties on tax parcels within 600 feet of the centerline of the alternative.

<sup>2</sup> Section 4(f) applies to historic properties directly impacted by an alternative; properties evaluated for direct impacts include any property within the limit of disturbance for the alternative and also include situations where demolition of all or some of the

<sup>3</sup> Includes only those cemeteries directly impacted by an alternative.

<sup>4</sup> Archaeological sites on file with SHPO; most have not yet been evaluated for National Register eligibility; note that the limit of disturbance (here and in subsequent rows) does not include future stormwater management and other needs such as wetland

<sup>5</sup> GIS inductive model based on known sites and environmental parameters; intended as a planning tool for estimating the relative likelihood for sites to be present in the limit of disturbance; note that potential archaeological significance has not been as

<sup>6</sup> GIS model based on environmental parameters and current theory regarding early historic settlement; intended as a planning tool for estimating the relative likelihood for sites to be present in the limit of disturbance; note that potential archaeological s

<sup>7</sup> Point locations for properties derived from historical maps and documents and assessed for likelihood of survival based on subsequent disturbances; note that potential archaeological significance has not been assessed; includes a 300-foot buffer and c

<sup>8</sup> Standing historic-period structures.

<sup>9</sup> Anticipated impacts to rare, threatened and endangered species based on coordination to date with DNREC. Detailed evaluation and coordination with DNREC and US Fish and Wildlife Service is continuing. The data represented in the potential rare

<sup>10</sup> These data represent known occurrences of RTE species; not potential habitat for RTE species.

<sup>10</sup> Based on consultation with the Office of State Planning Coordination, Kent and Sussex Counties, and the City of Georgetown; meeting held March 7, 2006.

**GEORGETOWN AREA**

June 15, 2007

Refined On-Alignment	Orange	Blue	Gold	Green	Brown	Purple
6.1	48.0	48.0	49.2	49.4	44.9	49.7
2,920	12,129	18,051	18,287	17,572	20,020	20,013
2,713	9,108	11,814	12,037	11,909	11,375	10,965
TBD	TBD	TBD	TBD	TBD	TBD	TBD
TBD	TBD	TBD	TBD	TBD	TBD	TBD
2	4	2	2	2	2	2
TBD	12	7	7	7	7	6
12 (3.9%)	57 (8.2%)	37 (5.0%)	37 (4.8%)	35 (5.0%)	32 (4.3%)	32 (4.6%)
19 (6.0%)	105 (15.2%)	41 (5.5%)	40 (5.1%)	42 (6.0%)	65 (8.7%)	60 (8.7%)
86 (27.9%)	174 (25.1%)	196 (26.1%)	178 (22.7%)	174 (24.8%)	188 (25.3%)	171 (24.7%)
191 (62.2%)	358 (51.6%)	478 (63.5%)	527 (67.4%)	451 (64.3%)	458 (61.7%)	429 (62.0%)
2 (0.7%)	4 (0.5%)	4 (0.5%)	4 (0.5%)	5 (0.5%)	4 (0.5%)	4 (0.5%)
2 (0.7%)	16 (2.3%)	6 (0.8%)	6 (0.8%)	6 (0.9%)	11 (1.5%)	11 (1.6%)
0 (0.0%)	0 (0.0%)	2 (0.3%)	3 (0.4%)	2 (0.3%)	2 (0.3%)	2 (0.3%)
304 (98.6%)	674 (97.2%)	741 (98.5%)	770 (98.4%)	691 (98.4%)	726 (97.8%)	676 (97.6%)
19	56	24	22	24	23	21
96	48	78	77	76	76	75
2	0	2	2	2	2	2
21	2	19	18	18	18	17
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
TBD	TBD	TBD	TBD	TBD	TBD	TBD
0	1	0	0	0	0	0
0	2	0	0	0	0	0
3	42	2	2	2	24	24
0	26	1	1	1	1	1
9.2	18.7	16.5	16.5	16.5	16.5	16.5
1	7	2	2	2	2	2
2	41	7	7	7	7	7
0	2	0	0	0	0	0
0	2	0	0	0	0	0
7	122	71	80	70	102	104
0	0	0	0	0	0	0
164	235	304	292	295	320	301
177	525	582	672	629	749	728
59	52	94	87	84	92	82
24	37	58	57	51	53	53
30	13	22	20	19	24	19
5	3	14	10	14	15	10
TBD	TBD	TBD	TBD	TBD	TBD	TBD
0	2	0	0	0	0	0
90	38	105	98	106	89	98
42	24	69	63	68	47	63
28	8	18	17	16	19	17
20	5	18	18	22	23	18
0	1	0	0	0	0	0
\$225 - \$250	\$256 - \$312	\$261 - \$319	\$310 - \$378	\$259 - \$317	\$317 - \$387	\$355 - \$433
POOR	GOOD	POOR	FAIR	POOR	FAIR	GOOD
10.6	3.6	6.8	5.9	6.8	6.8	5.9
0.0	9.0	4.6	5.5	4.4	5.3	6.2
10.6	12.6	11.4	11.4	11.2	12.1	12.1

Distributing components to the resource is proposed.

mitigation sites:

used, current as of May 2005

iflands has not been assessed, current as of May 2005

each point to account for mapping inaccuracies:

threatened and endangered (RTE) species areas row are not exhaustive